

REMARKS:

Claims 12 and 14-19 are currently pending in the application. Claims 16-19 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Claims 12, 14, and 15 stand rejected under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 12 and 14-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sonneborn et. al. (*Sonneborn*) in view of U.S. Patent No. 3,439,888 to Danic (*Danic*), U.S. Patent No. 6,095,456 to Powell (*Powell*), and U.S. Patent No. 5,871,177 to Demouzon et. al. (*Demouzon*). Claims 1-11, 13, 16, and 17 are hereby cancelled.

Rejections Under 35 U.S.C. § 112, First Paragraph:

The Office Action indicates that Claims 16-19 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement. However, it is respectfully submitted that the Office Action fails to establish a *prima facie* case of failure to comply with the enablement requirement.

The test for determining whether a claimed invention is properly enabled by the specification has been well-established: "Is the experimentation needed to practice the invention undue or unreasonable?"¹ The MPEP provides several factors for making an analysis of the undue experimentation question:

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." These factors include, but are not limited to:

- (A) The breadth of the claims;
- (B) The nature of the invention;
- (C) The state of the prior art;
- (D) The level of one of ordinary skill;
- (E) The level of predictability in the art;
- (F) The amount of direction provided by the inventor;
- (G) The existence of working examples; and

¹ MPEP 2164.01, citing *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916), and *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

(H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.²

The MPEP clearly states that each of these factors should be considered when making an analysis of undue experimentation:

It is improper to conclude that a disclosure is not enabling based on an analysis of only one of the above factors while ignoring one or more of the others. The examiner's analysis must consider all the evidence related to each of these factors, and any conclusion of nonenablement must be based on the evidence as a whole.³

Thus, based on the guidelines set forth in the MPEP, a proper analysis should be based on evidence related to each of the above factors. However, the only discussion in the Office Action regarding this rejection is as follows:

It is not understood what is meant by "only the forward mount reacts torque". How can only the forward mount reacts [to] torque? What torque is this? Where is there support for this in the specification? Furthermore, how could the forward mount eliminate torsional redundancy from the engine mount such that torque from the rotor is prevented from being induced into the engine by the aft mount? From figures 16a and 16b and the description in the specification, it is only the bipod arrangement that the torsional redundancy elimination can occur. Please explain.⁴

It is respectfully submitted that the above is purely conclusory. As such, it provides none of the analysis required by the MPEP. For example, the MPEP requires that evidence related to each of the above factors *must* be considered; however, the Office Action fails to mention even one of these factors, and certainly provides no reasoning or analysis based on each of the factors.

It is also well-established that the Examiner bears the initial burden of providing the appropriate support for establishing a *prima facie* case in rejecting an application. As stated by the Federal Circuit, "[i]f examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the

² MPEP 2164.01(a).

³ *Id.*, referencing *In re Wands*, 858 F.2d 731, 737, 740, 8 USPQ2d 1400, 1404, 1407 (Fed. Cir. 1988).

⁴ Office Action, page 2.

patent.⁵ Since the Office Action fails to provide any of the requisite analysis for supporting this rejection, it is respectfully submitted that the rejection is improper and should be withdrawn.

In light of the discussion above, it is respectfully requested that the rejection of claims 16-19 under 35 U.S.C. § 112 be reconsidered and withdrawn.

However, in order to further the prosecution of the application, the Applicants hereby attempt to clarify the Examiner's misunderstanding. The forward mount is able to eliminate the torsional redundancy of a statically determinate aft mount by having the size, shape, weight, and other physical properties to accept substantially of all of the torque (Pg. 10, line 30 – Pg. 11, line 8). The size, shape, and material of flexure region of the forward mount is selectively tailored by altering T1, D2, and S1 to produce the dynamic response of the entire aircraft (Pg. 11, lines 4-8). Because the forward mount is sufficiently strong and tunable, then a redundant aft mount is not necessary to share the torque and load (Pg. 7, lines 22-23). A significant motivation for having a forward mount with these features is that the existence of a torque sharing (redundant) aft mount would inadvertently induce loading into the engine (Pg. 14, lines 21-27). A comprehensive description of the prevention of engine loading from redundant torque load paths is described in the paragraph starting on page 14, line 13, as well as the paragraph starting on page 14, line 28.

In regards to the Examiner's question regarding whether a bipod is the only arrangement in which torsional redundancy elimination can occur; the Applicants disclose an aft mount bipod arrangement at least because it provides sufficient engine support, without being rigid in the direction of engine torque. Figure 6 represents an aft mount bipod arrangement having two links, each being pivotally coupled to the engine via a mounting bracket (Pg. 10, lines 10-13). These links have a focal point P1 that lies on the longitudinal axis of engine (Pg. 10, lines 13-15). This particular bipod arrangement **does not support or resist engine torque; therefore substantially all the torque is countered through the forward mount.** Another aft mount bipod arrangement, as

⁵ *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

shown in Figures 10 and 15, only attaches to the engine through a single pivot pin and has a focal point which is located above the longitudinal center line of the engine (Pg. 13, lines 8-18). This particular bipod arrangement also **does not support or resist engine torque**, therefore **substantially all the torque is countered through the forward mount**.

Rejections Under 35 U.S.C. § 112, Second Paragraph:

Claims 12, 14, and 15 stand rejected under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. The Examiner states that the phrases "the contribution from the engine to the dynamic response of the engine" and "the selected physical characteristics of the flexure region" lack antecedent basis.

Claim 12 is hereby amended to more particularly point out and distinctly claim the subject matter that the Applicants regard as the invention. Claims 14 and 15 are dependent upon Claim 12, which is hereby amended. The Applicants submit that the amendments to Claim 12 overcome the Examiner's rejection under 35 U.S.C. § 112, and that Claim 12, as amended, and Claims 14 and 15, are now in condition for allowance. Therefore, the Applicants respectfully request that Claim 12, as amended, and Claims 14 and 15 be allowed.

Rejections Under 35 U.S.C. § 103(a):

Claims 12 and 14-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Sonneborn* in view of *Danic*, *Powell*, and *Demouzon*.

With respect to Claims 12, and 14-19, the Examiner states that *Sonneborn* teaches forward mount and aft mount, but that *Sonneborn* is silent on the forward mount having the base portion, top portion, and flexure region as claimed. The Examiner relies on *Danic* to teach a forward mount having a base portion, top portion, and flexure region that has a first part with a second diameter and a second part forming a transition between the second diameter and the first diameter. The Examiner further states that the transition

occurs from the second diameter to the first diameter due to the different size diameter, which creates a slope. The Applicants respectfully disagree.

In regards to *Sonneborn*, the Applicants reiterate all of the distinguishing comments made in the Amendment filed on 10 October 2008; in particular, *Sonneborn* teaches a propulsion system for a tilt rotor aircraft. The *Sonneborn* propulsion system includes: a turbine engine, a forward engine mount, a proprotor gear box, and an aft engine mount. The *Sonneborn* forward engine mount requires an engine torquemeter housing, a gimbal ring, and an input quill housing. This is fully explained on pages 7 and 8 of the subject application. The disadvantages of the *Sonneborn* system, as well as, the distinguishing features between the *Sonneborn* system and the claimed invention, are clearly documented in the subject application. It is the *Sonneborn* system that the claimed invention improves upon. The *Sonneborn* system is a complicated, heavy, gimbaled system. The *Sonneborn* system does not have the same functionality as, cannot be used as, and cannot be selectively tailored as, the claimed invention. For example, *Sonneborn* states that both front and rear mounts react torque, which means that the *Sonneborn* mount system is torsionally redundant. Eliminating redundant torque is one of the primary features of the claimed invention.

In contrast, the claimed invention teaches unique features. Aft mount 305 includes links 353a, 353b aligned with a focal point P1 that lies on longitudinal axis 357. This alignment eliminates undesired torque from rotor 23b from being induced into engine 307. This feature of torque from the rotor being prevented from being induced into the engine by the aft mount makes the subject invention unique. Indeed, *Sonneborn* teaches away from the features and functionality aft mount 305. *Sonneborn* states that both front and rear mounts react torque, which means that the mount system is torsionally redundant. Again, eliminating redundant torque is one of the primary features and functions of aft mount 305.

In regards to *Danic*, *Danic* teaches a propulsion mounting arrangement having a torque coupling which comprises a housing 20 (see Fig. 2) and an adapter housing 22

(see Fig. 2), both of which bolt together at adjacent flanges. *Danic* does not teach a single forward mount having a flexure region, base portion, and top portion.

In contrast, the claimed forward mount 303 has completely different features than the torque coupling of *Danic*. The claimed forward mount provides a selectively tunable flexure means for tailoring the dynamic response of the engine to react rotor torque from being induced into the engine. The size, shape, shape, weight, wall thickness, and other physical characteristics of the forward mount are selectively tailored to tune the contribution of the engine to the dynamic response of the entire aircraft. The chalice-like shape and flexure as claimed in the present application have unique and definitive purposes. In contrast, the torque coupling in *Danic* serves no other purpose than to rigidly bolt the engine 17 to housing 21. *Danic* does not disclose, teach, mention, or suggest using housing 20 as a flexure member. Indeed, housing 20 and adapter housing 22 are particularly configured so as to be easily disassembled during maintenance. As such, *Danic* actually teaches away from the claimed invention. For at least these reasons, the Applicants submit that it would not have been obvious to a person of ordinary skill in the art at the time of the invention with knowledge of *Sonneborn* and *Danic* to arrive at the claimed invention.

The Examiner states that *Powell* is introduced to show that bipod legs are well known. The Applicants respectfully disagree. *Powell* teaches two links 205, 210 which are completely different from the aft mount 305 of the claim invention. Firstly, the links in *Powell* are not oriented transverse to the longitudinal axis the engine. Secondly the axis of the links is not focused near a longitudinal axis through the engine. As such, if the links in *Powell* were utilized as an aft mount in the present invention, then the links from *Powell* would react torsional load, thereby resulting in a determinate engine mount system. Again, eliminating redundant torque is one of the primary features and functions of aft mount 305. A determinate engine mount system that redundantly reacts torque is at least heavier, more expensive, and introduces undesirable torque upon the engine, which is what the claimed invention avoids.

The Examiner states that *Demouzon* is introduced to show that pylon mounting brackets are well known. The Applicants respectfully disagree. *Demouzon* teaches an engine to pylon mounting system that is completely different than the claimed invention. As shown in Figure 1, *Demouzon* teaches a suspension device 10 comprising a first support 20, secured to the pylon, and a second support 40 which is secured to the engine. The first and second supports 10, 20 are secured together using the inherent "heel and toe" effect of the two faying surfaces to provide rigidity between the engine and pylon. In contrast, the claimed pylon mounting bracket attaches to the engine and is coupled to the links. As such, if the pylon mounting brackets in *Demouzon* were utilized in the present invention, then the pylon mounting brackets would react torsional load, thereby resulting in a determinate engine mount system. Again, eliminating redundant torque is one of the primary features and functions of the present invention. Unlike the prior art, the claimed aft mount assembly does not counteract the induced torque from the rotor (see Fig. 16A). For at least these reasons, the Applicants submit that *Demouzon* does not show that pylon mounting brackets are well known.

For at least these reasons set forth above, the Applicants submit that it would not have been obvious to a person of ordinary skill in the art at the time of the invention with knowledge of *Sonneborn*, *Danic*, *Powell*, and *Demouzon* to arrive at the claimed invention. Claims 16 and 17 are hereby cancelled; however, some limitations of Claims 16 and 17 have been incorporated into amended Claim 12. Claims 12, 18, and 19 are hereby amended to more particularly point out and distinctly claim the subject matter that the Applicants regard as the invention. The Applicants submit that the amendments to Claims 12, 18, and 19 overcome the Examiner's rejections of Claims 12, 14, 15, 18, and 19 under 35 U.S.C. § 103(a), and that Claims 12, 14, 15, 18, and 19, are now in condition for allowance. Therefore, the Applicants respectfully request that Claims 12, 14, 15, 18, and 19 be allowed.

CONCLUSION:

This Amendment is being filed via the U.S. Patent and Trademark Office's EFS-Web electronic filing system. No fees are deemed to be necessary; however, the Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayments, to **Deposit Account No. 502806**.

Please link this application to Customer No. 38441, so that its status may be checked via the PAIR System.

Respectfully submitted,

Date

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